Reid Middleton
728 134th Street SW, Suite 200
Everett, WA 98204
425/741-3800 (Fax 425/741-3900)

TRANSMITTAL

RECEIVED
JUL 17 2000
KING COUNTY
INTERNATIONAL AIRPORT

Date: 7/14/00

To: John Current
King County International Airport
(Boeing Field)
7233 Perimeter Road
P.O. Box 80245
Seattle, WA 98108

From: Randy Hall

John-
I have it + has generally looked ok but had a few questions + comments.
Thx - go

Project: King County International Airport (Boeing Field)
Runway 13L-31R Rehabilitation
AIP 3-41-0058-26

File No. 23-00-009

Enclosures:

No. of Copies	Description
	Preliminary Scope and Engineering Costs

Action Requested:
☐ None ☐ For your Records ☐ For your Signature ☐ For your Review and Return
☐ Other: _____
Date Required: _____

John,

A preliminary scope and engineering proposal for the upcoming Runway 13L-31R rehabilitation project are enclosed. The scope is centered around the runway's upgrading to meet FAA standards for commercial service runways.

There obviously has not yet been an opportunity to sit down together to discuss scope items in detail and so it's arguably a bit premature to also consider the corresponding engineering costs. However, we thought there might be some value in taking a look at a preliminary fee proposal, not just in terms of specific numbers but also in terms of format. As is most commonly the case with FAA projects, the design portion of the package is set up as a lump sum and the construction engineering is reflected as time and expense. The proposal reflects hours of effort per task that are quite consistent with those we have utilized on other similar airport projects. The engineering issues to be considered, the basic design and construction procedures to be followed and the steps of the FAA process are essentially the same as with these previous projects.

Please keep in mind that both the Field Engineering and the Quality Assurance Lab Testing items, under Construction Engineering (time and expense), are difficult to gauge since they are directly influenced by the Contractor's construction pace and weather conditions. The Q.A. dollar figure we have shown is one we find to be a reasonable average for a paving job of this magnitude. Since a thorough lab program is a strict FAA requirement, however, this number could change by necessity during the construction.

John, after you have had a chance to review this proposal, please ask us for clarification on anything that is not clear. When the time arrives for your independent estimator to do an analysis, we would be happy to provide a "blanked out" fee proposal form or electronic file to help ensure that we are all evaluating the same scope.

Thanks.

Randy

7/14/00

ENGINEERING SCOPE OF WORK

KING COUNTY INTERNATIONAL AIRPORT
(BOEING FIELD)
RUNWAY 13L-31R REHABILITATION

PROJECT OUTLINE

- Limited geotechnical investigation.
- Runway pavement deflection testing and strength evaluation.
- Topographic survey of runway and transitional taxiway areas.
- Bonding improvement (grinding of existing surface) prior to overlay.
- New runway surface profile and cross slopes consistent with FAA criteria and minimum strength requirements.
- Evaluation of strength and condition of connecting Taxiways A4 and A7.
- Paved transitions into adjacent taxiways.
- Determination (non FAA-eligible) of intersection location of future Taxiway A3.
- Grooving of new runway pavement surface.
- Evaluation of existing runway threshold locations.
- Runway and taxiway pavement striping.
- Evaluation of existing runway electrical systems.
- Addition of Runway End Identifier Lights (REILs).
- Addition of distance-remaining signage.
- Upgrading to electrical vault.

ASSUMPTIONS

- Permits such as NPDES are not included with contract.
- ~~If required by agencies~~, SEPA checklist will be performed by Reid Middleton. It is required
- ~~If required by agencies~~, Biological Assessment will be included with contract. It is required
- Final determination of runway width will have been completed by Airport and FAA prior to beginning of design process.
- Existing runway edge lighting system will not be relocated on this project.
- Construction engineering fees are based upon 40 days on-site during construction activity, including presence during all asphalt quality assurance testing. In the event that the Contractor's schedule necessitates additional engineering field time, the Engineer shall be compensated for the additional time on a cost plus fixed fee basis.
- Quality Assurance lab testing is included under construction engineering.

- The Contractor will provide construction surveying.
- Design work to be completed prior to May 1, 2001.
- Construction and project closeout to be completed prior to May 1, 2002.

PRELIMINARY ENGINEERING

Formulate project and finalize work scope and schedule with Airport staff and FAA.

Prepare construction and project cost estimate.

Prepare grant application based upon construction and project cost estimate.

Do the grant app not already done?

Topographic survey of runway for development of a base map for design will include:

- Typical 50' longitudinal x 25' transverse grid plus obvious grade breaks within the approximate 3,700' length of the runway and laterally to 150' either side of runway centerline.
- Similar survey grid within transitional areas of connecting taxiways.
- All drainage, utilities, and miscellaneous structures within runway construction limits.
- Develop base map for design.

Runway pavement deflection testing program to determine existing strength of pavement and to identify any weak areas.

Limited geotechnical investigation adjacent to the runway for the purpose of identifying ground moisture, exploring any identified weak runway areas, and the determining the CBR value for runway subgrade. The CBR values will influence the pavement overlay design.

Assist the Airport in complying with the DBE program and submitting goals to FAA Civil Rights.

Review available record data.

DESIGN ENGINEERING

Conduct pavement life cycle analysis for purposes of comparing the long-term cost of asphalt versus concrete.

Attend one conceptual design meeting with the Airport staff, Airport users, and FAA personnel to review findings, recommendations, and solicit feedback.

Develop preliminary plans and contract documents in accordance with all applicable FAA advisory circulars, including:

AC 150/5300-13	Airport Design
AC 150/5370-2C	Construction Phasing and Safety
AC 150/5320-5B	Airport Drainage
AC 150/5320-6C	Pavement Design
AC 150/5340-1F	Marking
AC 150/5370-10A	Lighting

Prepare Engineer's Design Report, including:

- Scope of proposed project.
- Pavement design for new surfacing of runway (include FAA form 5100-1, Airport Pavement Design).
- List of Advisory Circulars, Design, and Construction Standards.
- Modifications to Standards.
- Phasing and scheduling recommendations.
- Project quantities & construction cost estimates.

Prepare plans for contract documents for the project in AutoCAD.

Meeting with King County (County) and FAA to review intermediate-stage design including phasing and safety considerations.

Incorporate intermediate design review comments.

Meeting with County and FAA for final review of design documents.

Finalize Engineer's Design Report.

Prepare final construction quantities and construction cost estimates.

Prepare final project safety/phasing/layout plans.

Prepare final bidding/construction contract plans and specifications.

Furnish the County with project description for use in advertising for bids.

Furnish the County with 50 sets of plans and specifications for distribution to bidders.

CONSTRUCTION ENGINEERING

Assist the Airport with contractor coordination/questions through the bidding process, including conducting a pre-bid conference at the Airport.

Attend bid opening, prepare a tabulation of bids, and make a recommendation for award.

Assist the Airport with preparation of the FAA grant application. Same question

Prepare final contractor contracts (five original copies) according to all applicable King Co + FAA requirements

Conduct a preconstruction conference.

Furnish on-job construction observation to monitor and document construction progress, document conformance with schedules, plans, and specifications, and advise the Airport of defects or deficiencies noted. Resident engineer(s) will measure and document construction pay quantities and document significant conversations or situations. The Engineer shall not be responsible for construction means, methods, techniques, sequences, quality of work, procedures, or for safety precautions and programs in connection with the work. Such responsibility shall rest with the Contractor.

Provide quality assurance testing as required by the FAA. Quality control testing to be provided by Contractor.

Provide coordination between the contractor, Airport staff, Airport users, and FAA personnel during construction.

Maintain daily logs and prepare weekly FAA inspection reports.

Prepare monthly contractor progress estimates and corresponding FAA reimbursement requests.

Conduct a final project inspection with the Airport, FAA, and the contractor.

Prepare project close-out including:
- Final project report.
- Final quantities and summaries.
- Prepare record drawings.
- Payroll record review.

PROJECT SHEET LIST

1. Cover
2. Project Layout Plan
3. Runway Plan & Profile & Drainage (1" = 30' Horizontal)
4. Runway Plan & Profile & Drainage (1" = 30' Horizontal)
5. Runway Plan & Profile & Drainage (1" = 30' Horizontal)
6. Runway Plan & Profile & Drainage (1" = 30' Horizontal)
7. Runway/Taxiway Transition Plan & Profile
8. Runway/Taxiway Transition Plan & Profile
9. Runway/Taxiway Transition Plan & Profile
10. Runway/Taxiway Transition Plan & Profile
11. Runway/Taxiway Transition Plan & Profile
12. Runway Pavement Sections
13. Taxiway Pavement Sections
14. Runway Striping Plan & Details
15. Electrical Plans
16. Electrical Plans
17. Electrical Plans
18. Electrical Plans
19. Electrical Vault Upgrading
20. Electrical Details
21. Safety and Phasing Plan

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AIRPORT: **King County International Airport (Boeing Field)**
PROJECT: **Runway 13L-31R Rehabilitation**
CLIENT: King County
JOB NUMBER: 23-00-009
DATE: 7/14/00

PROJECT TASK	PROJECT PRNPAL $46.71	SENIOR ENGR $35.94	DESIGN ENGR $21.49	SE DESIGNER $24.75	SURVEY TECH $19.96	2-MAN SURVEY $40.00	WORD PROC. $19.96	TOTAL HRS	PROJECT COST
PRELIMINARY DESIGN									
DIRECT SALARY:									
Attend Scoping Meeting	4	4	4	0	0	0	0	12	$417
Attend Pre-Design Meeting	4	4	4	0	0	0	0	12	$417
Prelim. Const. Cost Estimate	0	8	0	0	0	0	0	8	$288
Grant Application	0	6	0	0	0	0	0	6	$216
Review Existing Site Data	1	2	8	0	0	0	0	11	$291
Topographic Survey	1	15	0	0	40	60	0	116	$3,784
Geotechnical Investigation Coord	0	0	4	0	0	0	0	4	$86
Deflection Testing Coord.	0	4	0	0	0	0	0	4	$144
DBE Program/Goals	1	1	12	0	0	0	0	14	$341
SEPA Checklist	1	0	16	0	0	0	0	17	$391
Direct Labor	12	44	48	0	40	60	0	204	$6,375
Overhead - Percentage of Direct Labor			177%						$11,284
Fixed Fee - Percentage of Direct Labor Plus Overhead			15%						$2,649
Subtotal - Labor, Overhead, Fixed Fee									**$20,308**

EXPENSES:

Computers:	0	Hours @	$15	per hr.	(Data Collector)	$0	
	0	Hours @	$12	per hr.	(Soft Desk)	$0	
Travel:	Cost/Unit	Trips	Miles				
Mileage	$0.40	12	60			$288	
Misc. Expenses:							
Fax						$5	
Aerial Photo						$150	
Telephone						$10	
Postage						$10	
Printing						$10	
Processing Fee						$28	
Subtotal - Expenses							**$501**

SUBCONSULTANTS:

PacRim - Geotechnical Investigation	$5,500	
Pavement Engineers - Deflection Testing	$4,940	
Handling Fee	$1,566	
Subtotal - Subconsultants		**$12,006**

TOTAL PRELIMINARY DESIGN (Lump Sum) **$32,815**

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AIRPORT: **King County International Airport (Boeing Field)**
PROJECT: **Runway 13L-31R Rehabilitation**
CLIENT: King County
JOB NUMBER: 23-00-009
DATE: 7/14/00

SHEET #	SHEET & TASK DESCRIPTION	PROJECT PRNPAL $46.71	SENIOR ENGR $35.94	DESIGN ENGR $21.49	SE DESIGNER $24.75	SURVEY TECH $19.96	CADD OPER. $19.96	WORD PROC. $19.96	TOTAL HRS	PROJECT COST
	DESIGN ENGINEERING									
	DIRECT SALARY:									
	Life Cycle Cost Analysis	1	4	8	0	0	0	0	13	$362
	Pavement Bonding Analysis	4	8	2	0	0	0	0	14	$517
	Plan Sheets:									
1	Cover	0	1	4	0	0	6	0	11	$242
2	Proj Layout Plan	1	2	8	2	0	20	0	33	$739
3	Runway Plan & Profile & Drainage	1	4	8	8	0	20	0	41	$960
4	Runway Plan & Profile & Drainage	1	4	8	8	0	20	0	41	$960
5	Runway Plan & Profile & Drainage	1	4	8	8	0	20	0	41	$960
6	Runway Plan & Profile & Drainage	1	4	8	8	0	20	0	41	$960
7	RW/TW Transition Plan & Profile	1	2	8	4	0	20	0	35	$789
8	RW/TW Transition Plan & Profile	1	2	8	4	0	20	0	35	$789
9	RW/TW Transition Plan & Profile	1	2	8	4	0	20	0	35	$789
10	RW/TW Transition Plan & Profile	1	2	8	4	0	20	0	35	$789
11	RW/TW Transition Plan & Profile	1	2	8	4	0	20	0	35	$789
12	Runway Pavement Sections	2	8	8	4	0	20	0	42	$1,051
13	Taxiway Pavement Sections	1	8	8	4	0	20	0	41	$1,004
14	RW Striping Plan & Details	1	2	8	8	0	20	0	39	$888
15	Electrical Plans	1	4	2	0	0	2	0	9	$273
16	Electrical Plans	1	4	2	0	0	2	0	9	$273
17	Electrical Plans	1	4	2	0	0	2	0	9	$273
18	Electrical Plans	1	4	2	0	0	2	0	9	$273
19	Electrical Vault Upgrading	1	4	2	0	0	2	0	9	$273
20	Electrical Details	1	4	2	0	0	2	0	9	$273
21	Safety & Phasing Plan	4	10	16	4	0	20	0	54	$1,388
	Permits/Letter Report	0	0	0	0	0	0	0	0	$0
	Pavement Design	0	16	0	0	0	0	0	16	$575
	Draft/Final Engineer's Design Repor	2	10	20	0	0	0	8	40	$1,042
	3 Review/ Coordination Meetings	8	12	12	8	0	0	0	40	$1,261
	Incorporate Review Comments	0	4	8	8	0	10	0	30	$713
	Construction Management Plan	1	4	10	0	0	0	0	15	$405
	Specifications	1	30	30	0	0	0	0	61	$1,770
	Quantities/Cost Estimates	2	8	10	20	0	0	0	40	$1,091
	Bid Advertisement	0	1	0	0	0	0	1	2	$56
	QA/QC	8	10	0	0	0	0	0	18	$733
	Direct Labor	51	188	236	110	0	308	9	902	$23,260
	Overhead - Percentage of Direct Labor			177%						$41,170
	Fixed Fee - Percentage of Direct Labor Plus Overhead			15%						$9,665
	Subtotal - Labor, Overhead, Fixed Fee									**$74,095**

AIRPORT:	**King County International Airport (Boeing Field)**						
PROJECT:	**Runway 13L-31R Rehabilitation**						
CLIENT:	King County						
JOB NUMBER:	23-00-009						
DATE:	7/14/00						
EXPENSES:							
Computers:	300	Hours @	$12	per hr.	(AutoCadd)	$3,600	
	100	Hours @	$12	per hr.	(EaglePoint)	$1,200	
Travel:	Cost/Unit	Trips	Miles				
Mileage	$0.40	6	60			$144	
Misc. expenses:							
Fax						$5	
Telephone						$10	
Postage						$10	
Printing - 50 sets						$2,000	
Processing Fee						$304	
Subtotal - Expenses							**$7,273**
SUBCONSULTANTS:							
Elcon - Electrical Engineering						$33,699	
Handling Fee						$5,055	
Subtotal - Subconsultants							**$38,754**
	TOTAL DESIGN ENGINEERING					(Lump Sum)	**$120,122**
	TOTAL - LUMP SUM ENGINEERING						**$152,937**

AIRPORT: **King County International Airport (Boeing Field)**
PROJECT: **Runway 13L-31R Rehabilitation**
CLIENT: King County
JOB NUMBER: 23-00-009
DATE: 7/14/00

Amalgamation

PROJECT TASK	PROJECT PRNPAL $48.58	SENIOR ENGR $37.38	DESIGN ENGR $22.35	SE DESIGNER $25.74	SURVEY TECH $20.76	CADD OPER. $20.76	WORD PROC. $20.76	TOTAL HRS	PROJECT COST
CONSTRUCTION ENGINEERING		(Based on 40 Working-Day Schedule)							
DIRECT SALARY:									
Bidding Co-ord / Questions	2	8	8	4	0	0	0	22	$678
Addenda (Assume 1)	1	4	8	0	0	0	2	15	$418
Attend Bid Opening	0	4	0	0	0	0	0	4	$150
Bid Analysis / Recommendation	0	8	8	0	0	0	0	16	$478
FAA Grant App	1	2	8	0	0	0	2	13	$344
Construction Contracts	0	0	4	0	0	0	8	12	$255
Pre-Construction Conference	0	6	6	4	0	0	0	16	$461
Field ~~Engineering~~ Inspection	10	100	200	150	0	0	0	460	$12,555
Construction Coordination	10	75	75	20	0	0	0	180	$5,480
Prepare Daily & Weekly Reports	0	0	40	0	0	0	0	40	$894
Pay Estimates	0	8	16	4	0	0	0	28	$760
Conduct Final Inspection	0	6	6	0	0	0	0	12	$358
Record Drawings	0	4	10	10	0	20	0	44	$1,046
Project Closeout	2	30	40	10	0	0	8	90	$2,536
Update FAA Pavement Form	0	2	2	0	0	0	0	4	$119
Direct Labor	26	257	431	202	0	20	20	956	$26,532
Overhead - Percentage of Direct Labor			177%						$46,962
Fixed Fee - Percentage of Direct Labor Plus Overhead			15%						$11,024
Subtotal - Labor, Overhead, Fixed Fee									**$84,518**

Time estimate is too low, I think

EXPENSES:

Computers:	60	Hours @	$12	per hr.	$720	
Travel:	Cost/Unit	Trips	Miles	Days		
Mileage	$0.40	50	60		$1,200	
Per Diem					$0	
Misc. expenses:						
Fax					$5	
Telephone					$50	
Postage					$10	
Printing					$10	
Microfiche					$5	
Field Supplies					$10	
Processing Fee					$14	
Subtotal - Expenses						**$2,024**

SUBCONSULTANTS:

Quality Assurance Lab Testing	$35,000	
Elcon Associates, Inc.	$12,398	
Handling Fee	$7,110	
		$54,508
TOTAL CONSTRUCTION ENGINEERING (Time & Expense)		**$141,050**
ENGINEERING GRAND TOTAL		**$293,987**

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SEA403340

CIP ROUTING SI ''

Project Name: Runway 13L-31R Rehab

Project Number: 001294

1.0 Design

_____ 1.1 Proposal/RFP
_____ 1.2 Consultant Agreement
____ 1.2.1 Bonds/Insurance
____ 1.2.2 Amendments
____ 1.2.3 Contract Documents
_____ 1.3 Invoices/Progress Payments
_____ 1.4 Incoming Correspondence
_____ 1.5 Outgoing Correspondence
_____ 1.6 Record of Conversations (Phone/E-Mail)
X 1.7 Technical Reports
_____ 1.8 Drawings

2.0 Construction

_____ 2.1 Proposal/RFP
_____ 2.2 Contract
_____ 2.2.1 Change Orders
_____ 2.2.2 Contract Documents/Drawings
_____ 2.2.3 Bonds/Insurance Certificates
_____ 2.2.4 Permits/Licenses
_____ 2.3 Invoices/Progress Payment
_____ 2.4 Incoming Correspondence
_____ 2.5 Outgoing Correspondence
_____ 2.6 Record of Conversations (Phone/Email)
_____ 2.7 Quality Control/Technical Reports
_____ 2.8 Schedules
_____ 2.9 Record Documents (As-Built)
_____ 2.9.A O&M Manuals
_____ 2.9.B Photos
_____ 2.9.C Certified Payrolls/State Prevailing Wage
Name: _____
_____ 2.9.D Field Notes
_____ 2.9.E Submittal No. _____

3.0 Outside Agencies

_____ 3.1 Incoming Correspondence
_____ 3.2 Outgoing Correspondence
_____ 3.3 Record of Conversations (Phone/Email)
_____ 3.4 Internal Correspondence
_____ 3.5 Quality Control Reports
_____ 3.6 Technical Reports
_____ 3.7 External Funding Reports

4.0 County Force Design

_____ 4.1 Proposal/RFP/Scope of Work
_____ 4.2 Work Authorization/Blanket Agreement
_____ 4.3 Internal Correspondence
_____ 4.4 Record of Conversations (Phone/Email)
_____ 4.5 Technical Reports

5.0 County Force Administration

_____ 5.1 Internal Correspondence
_____ 5.2 Record of Conversations (Phone/Email)
_____ 5.3 Project Closeout
_____ 5.4 Field Notes (Misc)

Requested By & Date TW 12/21/02

Filed By & Date

KCSlip4 36796

SEA403341

CIP ROUTING SLIP
PLANNING

Project Name: _____

Project Number: _____

6.0 Planning

_____ 6.1 Project Scoping and Goals
_____ 6.2 Project Budget
_____ 6.3 Consultant Services
_____ 6.4 Proposal/RFP
_____ 6.5 Studies/Plans
- ____ 6.5.1 Feasibility
- ____ 6.5.2 Pre-Design
- ____ 6.5.3 30 Percent Design

_____ 6.6 Coordination
- ____ 6.6.1 Department
- ____ 6.6.2 Agencies/Jurisdictions
- ____ 6.6.3 Community

_____ 6.7 Correspondence
_____ 6.8 Technical Reports/Maps
_____ 6.9 Plans